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ABSTRACT

Achenbach's Child Behavioral Check List (CBCL) is an instrument that is administered to the parents of many thousands of children and adolescent annually in school systems and mental health agencies. It is a standardized instrument with age norms for males and females, on which parents rate their child's behavior. The CBCL consists of nine behavioral scales, but for boys and girls ages 4-5 and for girls ages 12-16, only eight scales are reported. This study was conducted to examine the relationship between the CBCL profiles and the Diagnostic and Statistical Manual of Mental Disorders, Third Edition-Revised, (DSM-III-R) diagnostic classification, and to test the relationship between the Global Assessment of Functioning (GAF) scores and the CBCL profiles. Findings based on data from 977 children and adolescents receiving treatment at one mental health center revealed no significant relationships between CBCL profiles and DSM-III-R diagnostic classifications or between the CBCL profiles and GAF scores. These findings suggest that, until further information is obtained, when the CBCL is used to make clinical judgment, it should be interpreted with caution. (NB)

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THE CHILD BEHAVIORAL CHECKLIST AS A PREDICTOR OF SELECTED DSM III-R DIAGNOSES

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THE CHILD BEHAVIORAL CHECKLIST AS A PREDICTOR OF SELECTED DSM III-R DIAGNOSES

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Abstract: The Achenbach's Child Behavioral Check List (CBCL) is an instrument that is given to many thousands of children annually in school systems and mental health agencies. It is a standardized instrument with age norms for males and females, on which parents rate their child's behavior. The check list consists of nine behavioral scales, but for boys and girls ages 4-5, and girls 12-16, only eight scales are reported. The subjects for this study were 977 children who are clients of a large urban mental health agency, ranging in age from 4-16 years, representing a widely diverse socioeconomic and ethnic population. The general research question was how well do the eight sub scales of the CBCL predict the most common DSM III-R diagnoses classifications such as, adjustment disorder, conduct disorder, attention deficit hyperactivity disorder and Global Assessment of Functioning (GAF)? Regression equations were built to determine how well the sub scales predict the DSM III-R classifications, along with cross-validation procedures to estimate the stability of the prediction function.

Introduction

In today's society, accountability has become a concern of virtually all organizations, especially those who are dependent on external funding for their existence. As money and budgets get tighter, and agencies vie for the limited available resources, accountability takes on even greater importance. Mental health agencies are among those most sensitive to this issue because there are so many competing for the few available dollars.

One method mental health agencies use to demonstrate their success is by administering standardized tests along with in-take and exist diagnostic estimates. The Child Behavioral Check List (CBCL) is one such instrument that is used clinically and for research purposes. The CBCL is devised to provide standardized scores of behaviors for children aged 4 through 16, as reported by their parent or caretakers. The authors, Achenbach and Edlebrock (1983), have presented impressive quantitative support for its use.

The diagnoses and treatment of children's disorders, however, is a complex issue. Due to the liberal application of the CBCL in child mental health settings, it is critical that the validity of the instrument is supported for specific populations. (Garrison and Earls, 1985; McMahon, 1984).

Several of the empirically-derived syndromes of the CBCL are quite analogous to the DSM III-R classifications. There is support of this in that the CBCL has been found to correlate well with the DSM-III-R (Edelbrock, 1984). Both Achenbach (1980) and Edelbrock, et al, (1984) have also found behavior-problem profiles from the CBCL to correlate with DSM-III-R diagnoses. However, several other researchers have not found such an agreement (Bird, et al., 1987).

It has been argued that to expect a relationship between the DSM-III-R and CBCL is contradictory (Bird et al., 1987). This argument is based on the fact that the scales on the CBCL are empirically derived, while the DSM-III-R has categorical definitions of syndromes, which they state would suggest a differential approach to assessment. However, it appears to the investigators that there should be a theoretical relationship between these assessments.

Therefore, our first research question tests the relationship between the CBCL profiles and the DSM-III-R diagnostic classification in our current sample, and the second research question tests the relationship between the GAF scores and the CBCL profiles (including the GAF at intake, the GAF at post test, as well as the GAF gain score).

The validity of the diagnostic assessment measure affects the predictability of successful therapeutic outcomes. To the extent that the measure that is used to assess the diagnoses is invalid, then the ability to measure success of therapeutic interventions has to be questioned. Even though there have been a large number of research studies on the CBCL, relatively little consistent research has been done on the effectiveness or usefulness of the CBCL for diagnostic purposes. The large sample in this study allows the researchers to further investigate this relationship, under the statistical conditions of strong power estimates.

Method

Description of Sample- The subjects for this study were randomly chosen from the population of those coming to a mental health center in a Northeastern Ohio city for treatment. The clients' ages ranged from 4 to 16 years old, and the sample is divided approximately evenly between African Americans and Caucasians. Sixty-eight DSM-III-R classifications were used to diagnostically catagorize the 977 subjects. These classifications were collapsed into ten encompassing categories: 1-adjustment disorder; 2- anxiety disorders; 3-attention deficit disorders; 4-conduct disorders; 5-mood disorders; 6-psychotic disorders; 7-V-code

diagnosis; 8-physical disorders; 9-chemical dependency disorders; and 10- sexual disorders. However, only four of these categories (adjustment, attention deficit, conduct and mood) contained 100 or more subjects.

It was estimated that seventy-five percent of the subjects came from homes with income levels below $15,000. (Subjects were generally considered to be low SES.) A majority of subjects also came from non-traditional households. The CBCL was administered at intake and the GAF was estimated at time of intake and termination. There was also a DSM-III-R diagnosis that was the basis of the initial assessment at the intake phase.

Instruments: There were two major assessment devices used, the CBCL and the DSM-III-R. The CBCL is a standardized instrument of 118 items that takes about fifteen minutes for parents or caretakers to complete. It is used to assess clients between the ages of 4 and 16. It also contains two open-ended items which allows the parent or caretaker to supply additional insights about the client. Test-retest reliability estimates for the CBCL are approximately in the .95 range for the seven day interval, and have inter-parent agreement of approximately .99. (Achenbach and Edelbrock, 1983).

The DSM-III-R Global Assessment Functioning Scale (GAF) is a clinical assessment of client's general life functioning as related to specific activities. The GAF estimates the general mental status of the client, by subjectively assessing activities and levels of functioning over the past year. For this study, there were two GAF estimates, one at intake and one at the time of exit. Additionally, a gain score was obtained by subtracting the intake score from the exit GAF score.

Statistical Analysis: Both descriptive and inferential statistics were used for this study. The major inferential technique was multiple linear regression analysis (MLR) using the SAS subroutine Proc-Reg. This specific procedure allowed the researchers to write models to reflect the research questions by testing the full model against the restricted model, using the SAS test statement. This technique has the flexibility of allowing the researcher to analyze continuous and categorical variables, as well as interactions between such variables, and curvilinear relationships. Using this procedure, one can also do simple descriminant analysis. (McNeil, Kelly, McNeil, 1975; Newman, 1978; Newman and Benz, 1983). Alpha divided by N-1 was also used as a method to control for Type I error rate build-up. (Newman and Fry, 1972, 1992).

Results

The results of the regression analysis were clearly non-significant. Forty-five simple discriminant analyses were run using regression procedures; that is, all possible two-way comparisons were made between the ten groups. The eight CBCL profiles scores were used as predictors variables to differentiate between each of the forty-five pairs of diagnostic categories. There were no significant differences found after controlling for multiple comparisons.

Three additional regression analyses were run using the intake GAF score, the post test GAF score and the GAF gain score as the criterion variable. The eight CBCL profile scores were used as the predictor variables. Only the regression analysis having the gain score as the criterion, approached significance ($p = .11$). Note, that out of the eight predictor variables, only three of the variables (immaturity, schizoid, and aggression) produced p values of .05 or less, when estimating unique variance accounted for, with aggression being negatively related to GAF gain scores.

Discussion

The major research questions which investigated the relationship between the DSM-III-R diagnostic categories and the CBCL profiles were found to be non-significant, as was the relationship between the GAF scores and the CBCL. There can be a number of explanations for this lack of relationship. One is that the DSM-III-R diagnostic categories are not valid. Another is that the CBCL is not a valid measure for identifying diagnoses. The grouping of the 68 diagnostic classifications into ten major categories may also have had an effect on the discriminative ability of the CBCL. (The researchers believe this is unlikely. If anything, it should have increased the ability of the CBCL to differentiate.) Another possibility is that the CBCL is dependent upon parent ratings, not clinicians ratings, and therefore different behaviors are being evaluated.

Whatever the reason, the outcome is that it was not predictive. This has important implications for the use of the CBCL as an assessment device to estimate diagnostic improvement in clients as well as an instrument that is used to identify intervention strategies. If there is no relationship between the instrument and the diagnostic category, it seems inappropriate to use the instrument for identifying intervention strategies, since one would expect the intervention strategies to be

related to the diagnoses.

It should be noted that in current practice the CBCL is frequently used for identifying intervention strategies, but our data questions the appropriateness of this practice. The researchers have additional validity studies under way, investigating the factor structures of the CBCL across a variety of sub populations. Until more information is obtained, it is suggested that when the CBCL is used to make clinical judgement, it be interpreted cautiously.

Table

Profiles Predicting GAF Gain Scores

Variable	DF	Parameter Estimate	T for HO: Parameter=0	Prob >.1163 $R^2 = .0190$
Intercept	1	3.958837	8.013	.0001
Depressed-Social Withdrawal	1	-0.8663555	-1.362	.1738
Somatic Complaints	1	0.294425	0.462	.6441
Immature	1	1.357265	1.923	.0550*
Sex Problems	1	-0.474738	-0.693	.4886
Schizoid	1	1.517293	2.051	.0407 *
Aggressive	1	-1.453909	-2.374	.0179 *
Aggressive-Delinquent	1	.029781	.436	.6632